

REMARKS

Objection to Claim 25

The Examiner had objected to claim 25, requiring that the word “and” be inserted at line 10 after the word “platform”. That amendment has been made.

The §112 Rejections

The Examiner rejected claims 24 and 64 under 35 U.S.C. §112, second paragraph, indicating that the Examiner was unable to determine what Applicant is claiming by the claim language “wherein the quantity price per unit is less than the price for a single unit.”

With respect it is submitted that this language, with the following explanation, is clear and that no amendment should be required. For example, if the price for a single unit is \$10.00, whereas a discounted quantity pricing of \$8.00 per unit is provided for a quantity of 100 or more units, then “the quantity price per unit (\$8.00) is less than the price for a single unit (\$10.00)”.

The Substantive Rejections

The primary reference relied upon by the Examiner for all the rejections is Abraham et al. U.S. Patent No. 5,570,292. Before turning to the detailed comparison showing the shortcomings of the Abraham reference as compared to the amended claims, it will be helpful to review the fundamental teachings of the present application as contrasted to those of Abraham.

The present application is directed to apparatus and methods for automatic quoting of unique three-dimensional custom manufactured parts of arbitrary shape from a variety of manufacturing processes and materials. The customer who desires a quotation for the manufacture of the part provides a pre-existing CAD file describing the part's geometry. This pre-existing CAD file is created by the customer independent of any design constraints imposed by the manufacturer or the operator of the server computer system. The computer program included in the present invention analyzes the pre-existing CAD file and automatically calculates and provides to the customer a firm price quotation for the three-dimensional custom manufactured part of arbitrary shape. The customer can then place a purchase order based upon that firm price quotation. The system of the present invention is not directed to a limited number of pre-existing designs specified by the potential manufacturer (as we shall see is the case for Abraham), but instead provides automated price quotations for a truly custom manufactured part the shape of which is entirely arbitrary and determined solely by the customer.

This is in sharp contrast to the Abraham et al. system which is not at all related to the manufacture of truly custom three-dimensional parts of arbitrary shape. Instead, the Abraham et al. system merely describes a proprietary network entirely controlled by the product manufacturer which allows the customer to select and order from a menu, with some modest customization as to size. The customer selects from one of a limited number of manufacturer specified two-dimensional product shapes. Then the customer is allowed to make some limited modifications to that two-dimensional shape simply to make it fit a window opening in which the

customer is going to place the manufacturer specified two-dimensional design. The manufacturer provides a number of remote ordering stations which are located at various retail outlets or distribution points, and the customer must come to the manufacturer's remote ordering terminal where the customer selects one of the manufacturer's designs and selects from the limited permitted modifications to that design. Although a CAD file is transmitted from that remote ordering location to the manufacturer's server computer, it is not a pre-existing CAD file of the customer's creation and it is not directed to a three-dimensional part or to a part of arbitrary shape defined by the customer.

Also, in the system of the present invention the client computer is typically controlled by the client and belongs to the client, whereas in the Abraham system the remote computer is controlled by the manufacturer and is not the client's computer.

Thus it is apparent that from the commercial viewpoint the Abraham et al. system is directed to a completely different problem than is the present invention. The present invention provides a system which allows the customer to get a binding price quotation for a three-dimensional custom manufactured part of arbitrary shape completely determined by the customer. Abraham et al., on the other hand, is simply an ordering system completely controlled by the manufacturer which simply provides pricing on customer selected options on a manufacturer's specified design. No amount of modification of the Abraham et al. system is ever going to turn it into the system of the present invention. They simply are directed to entirely different problems and processes.

Applicant has amended each of the independent claims of the present application to clarify these distinctions between the present invention and Abraham.

For example, independent claim 1 has added a new step (a) of “permitting a client to provide on a client computer a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape determined by the client”.

Independent claim 31 has been amended to modify the description of the CAD file analysis program portion to be “a CAD file analysis program portion for receiving a pre-existing CAD file describing one or more three-dimensional custom manufactured parts of arbitrary shape, said pre-existing CAD file being constructed independently of the program, and for analyzing the pre-existing CAD file to determine one or more manufacturing criteria corresponding to each three-dimensional custom manufactured part of arbitrary shape”.

Independent claim 52 has been amended in step (a) to require “loading onto a computer system a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape”.

Independent claim 70 has been amended to modify its step (b) to require “loading onto one of the client computer and the server computer a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape, said pre-existing CAD file being created by the client prior to accessing the server computer system”.

Independent claim 71 has been amended in step (b) to require “uploading from the client computer to the server computer system a pre-existing three-dimensional computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape, said pre-existing three-dimensional CAD file being created by the client prior to accessing the server computer system”.

Independent claim 72 has been amended to require “loading onto a computer a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape, said pre-existing CAD file being independently constructed free of any design restrains imposed by the computer”.

Independent claim 73 has been modified to require “uploading from the client computer to the server computer system a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape”.

Independent Claim 1

Turning now to the specific rejections of the claims, the Examiner’s rejection of each of the independent claims is found in the claim rejection under 35 U.S.C. §102 spanning pages 3 and 4 of the Office Action. With particular reference to independent claim 1 the Examiner stated her rejection as follows:

“As for claims 1, 23, 52, 67-73 Abraham et al. disclose a method of providing a firm price quotation for a custom manufactured part, comprising:

a) permitting a client to access a server computer system from a client computer over a global communication network (col. 4, lines 29-40; col. 8, lines 4-18; FIGS 1 and 7);

- b) uploading from the client computer to the server computer system a computer aided design (CAD) file describing the custom manufactured part (FIG 6);
- c) analyzing the CAD file on the server computer system to determine one or more manufacturing criteria for the custom manufactured part (col. 4, lines 13-17);
- d) calculating in the server computer system a firm price quotation for the custom manufactured part based upon the one or more manufacturing criteria (abstract; col. 4, lines 35-37; and FIG. 8); and
- e) transmitting the price quotation to the client computer over the global communication network (col. 8, lines 13-19; FIG. 8)."

First it is noted that a careful reading of those provisions of the Abraham patent cited by the Examiner shows that the Abraham patent fell far short of anticipating claim 1 even in the original form of claim 1. Those portions of the text of Abraham cited by the Examiner include the following:

"Through use of a rule-based design technique, an artist's design for an art glass panel is entered into a computer along with a set of appropriate rules applicable to that design, which are combined to produce an output data file representative of that art glass design." Col. 4, lines 13-17.

"The customer can then view the reconfigured panel on the CRT display of the computer, and if satisfied with such design, readily order the reconfigured panel from the manufacturer. The input computers used by the customer can be remotely located from the manufacturer, providing for on-line real-time ordering by the customer. Further, the remote computers can instantly price the reconfigured panel prior to purchase, since all of the component part and assembly data information for such reconfigured panel is readily available to the computer computational programs, in digital form." Col. 4, lines 29-40.

“This invention illustrates a practical commercial approach to providing a customer with a real-time ordering system for art glass panels that fit his unique panel size and configuration needs, and to providing an art glass manufacturer with an automated and relatively cost-effective method of producing the customer’s unique art glass panels. The customer’s selected art glass design is reduced to digital computerized format. The digital information is readily accessible by standard or readily adapted software for accounting, recording and manufacture tracking purposes. An obvious advantage for the customer is that the customer can immediately be provided with a cost estimate or firm quote of the sale price of the art glass panel that has been configured in his behalf at the time his art glass panel design is computer generated for him, and prior to his decision to order the panel.” Col. 8, lines 4-19.

It is noted that claim 1 even in its original form required the CAD file to be uploaded from the client computer to the server computer, and required the analysis to determine one or more manufacturing criteria to be performed on the server computer system, and further required the calculation of a firm price quotation to be performed on the server computer system, and then required the transmission of the price quotation from the server computer system back to the client computer.

It is apparent from the quoted provisions of Abraham that no such communication back and forth between the remote terminal and the server of Abraham occurs. Instead, all of the analysis (limited as it is to preselected designs) and cost estimation occurs on the remote computer system. It is only after the client has determined to accept the price quotation and place an order that all of the information is then transmitted from the remote computer to the server computer of

Abraham. As stated at column 4, lines 35-36 of Abraham “the remote computers can instantly price the reconfigured panel”.

Nonetheless, Applicant has amended claim 1 in substantial ways to further emphasize that the CAD file which is being transmitted from the remote or client computer to the server computer system must be a pre-existing CAD file which describes a three-dimensional custom manufactured part of arbitrary shape determined by the client, not one predetermined by the manufacturer.

Thus turning to claim 1 as amended at least the following distinctions are present between amended claim 1 and the Abraham reference:

1. Step (a) of amended claim 1 requires that the client be permitted to provide “a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape determined by the client”. That is distinguished from Abraham in at least three ways:

- i. Abraham does not deal with three-dimensional parts but instead only deals with two-dimensional parts namely art glass panels.
- ii. Abraham does not permit the use of a pre-existing CAD file provided by the client, but instead Abraham generates its own CAD file on the manufacturer controlled remote terminal.
- iii. Abraham does not provide the ability to analyze a CAD file for a “custom manufactured part of arbitrary shape” but instead is limited to a menu of predefined shapes determined by the manufacturer.

2. In what are now steps (c), (d) and (e) of amended claim 1, this pre-existing CAD file must be uploaded from the client computer to the server

computer system, where the analysis of step (d) is performed on the server computer system, and where the calculation of step (e) is performed on the server computer system. In Abraham et al. the analysis (to the extent there may actually be any, which is not at all clear from Abraham) and the calculation of price are all performed on the remote terminal.

3. Finally, amended claim 1 in what is now step (f) requires that the price quotation be transmitted from the server computer system back to the client computer. As noted, in Abraham this does not occur because the price is computed on the remote terminal.

As will be appreciated by the Examiner, there is a vast difference in the requirements of a system which can analyze and automatically provide a binding price quotation for a three-dimensional object of arbitrary shape, as contrasted to the Abraham et al. system which is simply constructed to provide costing for two-dimensional art glass panels each having a fundamental shape already predefined by the manufacturer and selectable from a menu of predefined designs. While Abraham does not tell us anything about how it determines its automatic costing for its two-dimensional art panels of predefined design, it is apparent that that is a vastly more simple challenge than it is to provide a system which can provide binding pricing on truly custom manufactured three-dimensional parts of completely arbitrary shape.

Accordingly, independent claim 1 and claims 2-31 dependent therefrom should all be allowed for the reasons given.

Independent Claim 31

Independent claim 31 is directed to a program stored in computer readable medium, for generating binding price quotations for custom manufactured parts. Claim 31 as amended is distinguished from the Abraham et al. reference in at least the following ways:

1. The CAD file analysis program portion must be capable of “receiving a pre-existing CAD file describing one or more three-dimensional custom manufactured parts of arbitrary shape”. This is distinguished from Abraham et al. in at least the following ways:

i. Abraham et al. does not deal with three-dimensional parts but instead is limited to two-dimensional parts.

ii. Abraham does not deal with “custom manufactured parts of arbitrary shape” but instead is limited to selected modifications of predetermined design selected from a menu.

2. The CAD file analysis program portion of claim 31 is required to be constructed “for analyzing the pre-existing CAD file to determine one or more manufacturing criteria corresponding to each three-dimensional custom manufactured part of arbitrary shape”. The Abraham et al. system, on the other hand, is not capable of analyzing either a three-dimensional part or a custom manufactured part of arbitrary shape.

Accordingly, claim 31 and claims 32-51 dependent therefrom should be allowed for the reasons given.

Independent Claim 52

Independent claim 52 is distinguished from the teachings of Abraham et al. in at least the following ways:

1. Step (a) of claim 52 as amended requires “loading onto a computer system a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape”. This is distinguished from Abraham in at least the following ways:
 - i. Abraham et al. does not load a pre-existing file.
 - ii. Further Abraham et al. does not load a file describing a three-dimensional part of any kind.
 - iii. And finally Abraham et al. does not load a file describing a “custom manufactured part of arbitrary shape”, but instead is listed to selection from a menu of predefined designs.
2. Steps (b) and (c) of amended claim 52 require the “analyzing” and the “calculating...a firm price quotation”, both for the three-dimensional custom manufactured part of arbitrary shape. Abraham et al. does not teach any analysis or manufacturing which is applicable to either a three-dimensional part or a custom manufactured part of arbitrary shape, but instead is limited to two-dimensional parts selected from predefined designs available from a menu.

Accordingly, independent claim 52 and claims 53-69 dependent therefrom should be allowed for the reasons indicated.

Independent Claim 70

Independent claim 70 as amended is distinguishable from the Abraham et al. reference for at least the following reasons:

1. Step (b) of claim 70 requires “loading onto one of the client computer and the server computer a pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape, said pre-existing CAD file being created by the client prior to accessing the server computer system”. This is distinguishable from Abraham in at least the following ways:

i. Abraham does not provide for the loading of a pre-existing CAD file.

ii. Abraham does not provide for the loading of a CAD file describing a three-dimensional part, but instead is limited to two-dimensional parts.

iii. Abraham et al. does not provide for the loading of a CAD file describing a “custom manufactured part of arbitrary shape” but instead is limited to selection of predetermined designs from a menu.
modifications of predetermined design selected from a menu.

2. Step (c) of claim 70 and step (d) of claim 70 require analyzing the CAD file to determine manufacturing criteria for the “three-dimensional custom manufactured part of arbitrary shape”. Abraham et al. is not capable of any such analysis for either three-dimensional shapes or for any custom

manufactured parts of arbitrary shape, but instead is limited to analysis of predetermined designs selected from a menu.

3. Step (d) of claim 70 requires the “calculating in the server computer a firm price quotation for the three-dimensional custom manufactured part of arbitrary shape”. Abraham et al. does not disclose any system capable of calculating a price quotation for either a three-dimensional part or for any “custom manufactured part of arbitrary shape”. Furthermore, Abraham et al. discloses calculation of prices in the remote terminal, rather than the server computer.

4. Furthermore, step (e) of claim 70 requires that the price quotation be transmitted to the client computer (from the server computer) over the global communication network. Abraham et al., on the other hand, discloses that the price quotation is actually generated in the remote terminal.

Independent Claim 71

Turning now to independent claim 71 as amended it is distinguished from the Abraham et al. reference in at least the following ways.

1. Step (b) of claim 71 requires “uploading from the client computer to the server computer system a pre-existing three-dimensional computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape”. This is distinguished from Abraham et al. in at least the following ways:

- i. Abraham et al. does not allow the uploading of a “pre-existing” CAD file.
 - ii. Abraham et al. does not allow the uploading of a “three-dimensional” CAD file but instead is limited to two-dimensional files.
 - iii. Abraham et al. is not constructed to handle “custom manufactured parts of arbitrary shape” but instead is limited to selection of predefined designs from a menu.
2. Step (c) of claim 71 requires analyzing the CAD file “on the server computer system”, which is contrasted to Abraham et al. which analyzes the CAD file on the remote terminal.
3. Furthermore, step (c) requires the analysis to determine one or more manufacturing criteria “for the three-dimensional custom manufactured part of arbitrary shape”. Again, Abraham et al. cannot handle three-dimensional shapes but instead is limited to two-dimensional shapes and furthermore Abraham et al. cannot handle any “custom manufactured part of arbitrary shape” but instead is limited to predetermined designs selected from a menu.
4. Similarly, step (d) of claim 71 requires that the firm price quotation be calculated in the server computer, whereas Abraham et al. calculates it in the remote computer. Furthermore step (d) requires the calculation of a firm price quotation for a three-dimensional custom manufactured part of arbitrary shape, whereas Abraham et al. is limited to two-dimensional shapes of predetermined design selected from a menu.

Independent Claim 72

Independent claim 72 as amended is distinguishable from Abraham et al. for at least the following reasons:

1. Step (a) requires loading on a computer a “pre-existing CAD file describing a three-dimensional custom manufactured part of arbitrary shape”. This is distinguished from Abraham et al. in at least the following ways:

- i. Abraham et al. does not deal with pre-existing files.
- ii. Abraham et al. does not deal with three-dimensional parts.
- iii. Abraham et al. does not deal with custom manufactured parts of arbitrary shape.

2. Step (b) of claim 72 requires analyzing the pre-existing file to determine one or more manufacturing criteria for the three-dimensional custom manufactured part of arbitrary shape. Abraham et al. does not provide an analysis system capable of dealing with either three-dimensional parts, or with any custom manufactured part of arbitrary shape.

3. Step (c) of claim 72 requires calculating a firm price quotation for the three-dimensional custom manufactured part of arbitrary shape. Again, Abraham et al. does not disclose a system of performing this function, but instead its price calculation is limited to two-dimensional parts of predefined design selected from a menu.

Independent Claim 73

Before going into the details of independent claim 73 it is noted that claim 73 differs from the other independent claims discussed above in that it is focused upon methods relating to custom manufactured parts “to be manufactured by injection molding of thermoplastic material”, and it includes some additional features not previously discussed, namely in its step (d) regarding calculating the price quotation, the quotation is required to be “based upon both tooling pricing and molded part pricing”. No such feature is in any way shown or suggested by Abraham et al. which deals strictly with the manufacture of art glass, and it is believed that the Examiner overlooked these distinguishing features in the original Office Action.

Additionally, claim 73 as amended is distinguished from Abraham et al. in at least the following ways:

1. Step (b) of claim 73 requires the uploading to the server computer system of a “pre-existing computer aided design (CAD) file describing a three-dimensional custom manufactured part of arbitrary shape”. As noted, this is distinguished from Abraham et al. in three ways:
 - i. Abraham et al. does not deal with pre-existing files.
 - ii. Abraham et al. does not deal with three-dimensional parts.
 - iii. Abraham et al. does not deal with any “custom manufactured part of arbitrary shape”.

2. Steps (c) and (d) of claim 73 require analyzing and calculating, again based upon three-dimensional custom manufactured parts of arbitrary shape, none of which is possible with the Abraham et al. system.

Accordingly, it is respectfully submitted that claim 73 is distinguishable from the Abraham et al. reference for all the reasons given and should be allowed.

Dependent Claims

In view of the clear distinction between the primary reference Abraham et al. and all of the independent claims as amended, it is believed that all pending claims 1-73 should be allowed for the reasons discussed above.

There are, however, a number of features found in the dependent claims which provide substantial further reasons for allowance of those dependent claims, and some of the more significant ones will be discussed below. This is not in any way to be taken as an indication that all of the distinguishing features of the dependent claims are listed below.

Formula Based Pricing And The Tadao Reference

In the rejection beginning at the middle of page 4 of the Office Action the Examiner has rejected claims 2-6, 33-37 and 53-58 under 35 U.S.C. §103 based upon Abraham et al. in view of Tadao et al. Japanese Patent JP 09160945.

The Examiner has referred to paragraph [0020] of Tadao as disclosing the use of a formula to estimate cost.

Of course, the only one of the rejected claims which simply refers to the use of "a formula" generically is claim 2, which the Examiner seems to appreciate. The Examiner goes on to reject claims 3-6, 54-58 and 33-37 which deal with specific formulas based upon the Examiner's totally unsupported contention that it would be obvious to "utilize any formula to calculate the manufacturing cost because applicant has not disclosed that the applicant's formula provides an advantage."

Nothing could be further from the truth. Applicant has set forth in great detail the advantage, the particular purpose, and the stated problem which is solved by the specific formula of claim 3 and the other dependent claims.

Namely, the present invention and the particular formula set forth in claim 3, provide a system which is suitable for calculating "a firm price quotation" as is clearly required in claim 1, and provides a means for doing so in a way which the proprietor of the program can commit to commercially binding transactions on a profitable basis without resort to detailed analysis of the individual features of each part as has historically been required. See page 29, line 19 through page 30, line 2 of the application which states the following:

"The value of the pricing formula of the structure set forth in Equation 1 is that we have discovered that reasonable prices can be accurately determined in a reliably profitable manner by using a formula of the structure set forth, wherein the variables correspond to the volume of the parts being constructed and the vertical height dimension of the parts as a set when oriented in the most efficient fashion."

Not only does Tadao et al. not disclose the formula required in claims 3-6, 33-37, or 54-58, but further the use of formulas which is only generally described in Tadao is clearly simply for the purpose of estimating and is not suggested as being adequate for providing binding price quotations.

It will be appreciated by the Examiner that the provision of simple estimates, which may have value in a relative sense to a design process, is a far cry from a system which can generate binding price quotations of sufficient accuracy that the proprietor of the system can commit sight unseen to selling products in a profitable manner based upon those binding price quotations.

It is difficult to conceive of a more significant advantage than that which has been explicitly disclosed by Applicant in the present application.

Unique Formulas For Different Manufacturing Processes,
In View Of The Hazama Et Al. Reference

In the rejection beginning in the middle of page 6 of the Office Action the Examiner has rejected claims 7-12, 14-15, and 38-42 under 35 U.S.C. §103 based upon Abraham et al. in view of Tadao et al., and further in view of Hazama et al. U.S. Patent No. 6,539,399.

The Examiner basically takes the position that Hazama et al. allows a user to select from multiple manufacturing processes. The Examiner then leaps to the conclusion that none of the Applicant's specific processes are patentable, and the Examiner further compounds her error via the statement that "these differences are only found in the nonfunctional descriptive material and are not functionally

involved in the steps recited.” This simply is not true. Claim 7 adds the step of permitting the client to select one of the plurality of available manufacturing processes and then specifies that in step (e) of previously stated claim 1 wherein the firm price quotation is calculated the step “includes calculating the price quotation for the selected manufacturing process”. Thus the functional step of price calculation must be based upon the selected manufacturing process. Claims 8-12 and 14-15 then are directed to specific manufacturing processes, and accordingly the step (e) of price calculation involved with each of those processes must involve calculating the price quotation “for the selected manufacturing process”. The formula must be specifically adapted to that process.

Applicant has very specifically taught specific formulas for each of the processes in question. For example with regard to claim 9 which focuses on the “stereolithography process” Applicant teaches in detail the specific formulas for use with that process as found at page 23 line 8 through page 31 line 3.

With regard to the “selected laser centering process” which is the focus of claim 10, Applicant has specifically taught the formulas for use with that process as found at page 31 line 5 through page 34 line 20.

With regard to the “fused deposition modeling process” which is the focus of claim 11, Applicant has specifically taught the formulas for use with that process as found at page 35 line 1 through page 36 line 6 of the application.

With regard to the use of “formative manufacturing processes” which are the focus of claim 12, Applicant has taught specific formulas for use therewith as found at page 36 line 8 through page 41 line 4 of the application.

With regard to the process of molding parts which is the focus of claim 14, Applicant has taught specific formulas for use with such processes as found at page 41 line 6 through page 42 line 11 of the application.

The Examiner's suggestion that these features do not modify the functional steps involved in the claims is simply indefensible.

Specific Manufacturing Criteria And The Protomold.com Reference

The Protomold.com reference as constructed by the Examiner is not prior art to the present application. As shown in the DECLARATION UNDER RULE 131 previously submitted in this application the present invention was reduced to practice at least by January 3, 2000 when Applicant's website including all the claimed features was launched.

Much of the Protomold.com reference cited by the Examiner was generated after January 3, 2000, including at least pages 6-14 and page 17 thereof, all of which according to the marginal notations on the bottom of each page were recorded on Archive.org after January 3, 2000.

Since much of the Examiner's discussion of Protomold.com does not indicate what portions of the document the Examiner is relying on, it is respectfully submitted that the Protomold.com reference as it is presently constituted does not constitute prior art to the present application, and the reference should be withdrawn.

For this same reason the Examiner's rejection of claims 22 and 60 based upon Abraham et al. in view of Protomold.com and further in view of Partsnow.com should be withdrawn.

Buildsets And The Takeshi Reference

In the rejection beginning near the bottom of page 10 of the Office Action the Examiner rejects claims 25-26, 28, 47-51 and 62-64 under 35 U.S.C. §103 based upon Abraham et al. in view of Takeshi et al. Japanese Patent JP 09114873.

The Examiner's description of Takeshi refers to no specific discussion therein, but merely refers to the English language abstract and the figures and makes the unsubstantiated conclusion that Takeshi et al. discloses "for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes a buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine".

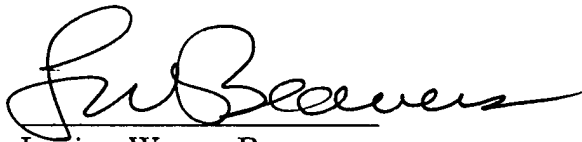
The Examiner's reliance on Takeshi is completely misplaced. The Takeshi reference merely provides a method for calculating the volume of a component defined in a CAD file. That volume calculation is apparently made by breaking the three-dimensional shape up into individual pixels which are then projected onto a two-dimensional plane and then added up to determine the volume of the component. But that has absolutely nothing to do with buildsets of multiple components or with determining platform areas required by each part of the buildset and total platform area required by the buildset. The platform areas

required by each part and by the total buildset are not directly related to the volume of those parts but instead are related to the footprint of those parts. With respect, the Takeshi reference is simply irrelevant to the present invention.

Conclusion

For all of the reasons set forth above it is respectfully submitted that claims 1-73 as amended are all in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Lucian Beavers', written over a horizontal line.

Lucian Wayne Beavers
Registration No. 28,183
WADDEY & PATTERSON
A Professional Corporation
Customer No. 23456

ATTORNEY FOR APPLICANT

This attorney is located at our Nashville, Tennessee office and can be contacted directly at:

Lucian Wayne Beavers
Waddey & Patterson
1600 Division Street
Roundabout Plaza
Nashville, TN 37203
(615) 242-2400



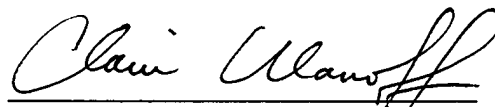
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I hereby certify that this Response to Third Non-Final Office Action for U.S. Patent Application No. 09/736,555 filed December 13, 2000 is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

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On 2-3-06



Claire Ulanoff

2-3-06

Date